

DEC 15 2006

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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-5 (cancelled).

6. (currently amended) An X-ray microscopic inspection apparatus having X-ray generating means for generating X-rays by allowing an electron beam from an electron source to impinge on a target for X-ray generation and for inspecting an object by utilizing said X-rays, said X-ray microscopic inspection apparatus comprising:

a field emission electron gun having an ultra-high vacuum electron gun chamber, an anode and an electron generating portion, wherein the electron generating portion is adapted to generate electrons and said anode is adapted to generate an electric field to accelerate said electrons;

said field emission electron gun further comprising a magnetic superposition lens including a magnetic circuit and a magnetic field generating portion, wherein said magnetic field generating portion is disposed separately from said ultra-high vacuum electron gun chamber and said magnetic superposition lens is adapted to generate a focusing lens magnetic field having a center,

wherein said magnetic field generating portion is disposed outside of said ultra-high vacuum electron gun chamber,

wherein said electron source of said electron generating portion is disposed substantially in the center of said focusing lens magnetic field and said focusing lens

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magnetic field is superposed to said electric field thereby reducing a lens aberration of said magnetic superposition lens and reducing a loss amount of said electrons from said electron source by focusing said electrons being accelerated by said electric field,

a scan coil for freely swinging an electron probe, formed via said magnetic superposition lens, on a surface of said target for X-ray generation;

said target comprising a plurality of target elements formed by a CVD method or a sputtering method, said target elements being provided for generating different characteristic X-rays having different wavelengths;

reflected electron detecting means for detecting a reflected electron from said target;

electron image generating means for performing imaging of a target surface of said X-ray generating target for X-ray generation utilizing signals from said reflected electron detecting means; and

a target selecting means for selecting a target element by swinging said electron probe to a position of an appropriate target element by controlling [[the]] a current of said scan coil, so that a characteristic X-ray having an appropriate wavelength is generated according to an inspecting purpose; and

wherein said target selecting means has a function of selecting a target element within a plurality of target elements by a user's selecting operation according to [[said]] an electron image of said target surface.

Claims 7-11 (cancelled).